RESOLUTION NO. 2010-3

A RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, APPROVING AN AMENDMENT TO THE PROFESSIONAL SERVICES AGREEMENT BETWEEN THE VILLAGE OF KEY BISCAYNE AND CSA INTERNATIONAL, INC. PERTAINING TO SEAGRASS MITIGATION; PROVIDING FOR IMPLEMENTATION; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, pursuant to Resolution 2008-35, the Village entered into a Professional Services Agreement with CSA International, Inc. ("Consultant"), with an effective date of July 17, 2008 (the "Agreement"), to perform seagrass restoration and mitigation services in accordance with that certain plan entitled "Seagrass Restoration and Mitigation Plan: Village of Key Biscayne" dated July, 2008 (the "Mitigation Plan"); and

WHEREAS, a portion of the Scope of Services set forth in the Agreement were completed with authorization from the Florida Department of Environmental Protection ("FDEP"), while the outstanding mitigation work has been delayed due to FDEP policies which resulted in revisions to the Mitigation Plan; and

WHEREAS, the Mitigation Plan has been revised based on FDEP's requirements and is entitled "Seagrass Restoration and Mitigation Plan: Village of Key Biscayne, Second Revision (October, 2009) (the "Revised Mitigation Plan"); and

WHEREAS, FDEP has approved portions of the Revised Mitigation Plan pertaining to in-kind seagrass mitigation and baseline monitoring, as set forth in section 3.1.2 of the Revised Mitigation Plan; and

WHEREAS, Consultant has submitted to the Village a modified proposal for the in-kind seagrass mitigation and baseline monitoring which sets forth the changes in the scope of work or services necessitated by section 3.1.2 of the Revised Mitigation Plan and cost modifications (the

"Modified Proposal"); and

WHEREAS, FDEP has not yet approved portions of the Revised Mitigation Plan pertaining to out-of-kind mitigation, and further amendments to the scope of services and compensation within the Agreement may be necessitated once FDEP has reviewed those portions of the Revised Mitigation Plan pertaining to out-of-kind mitigation; and

WHEREAS, the Village and Consultant desire to amend the Agreement to incorporate the requirements of the Revised Mitigation Plan and the Modified Proposal pertaining to in-kind seagrass mitigation and baseline monitoring, and modify the Scope of Services and Compensation for Services pursuant to the terms and conditions of the Amendment to the Agreement attached hereto as Exhibit "A"; and

WHEREAS, the Village Council finds that approval of the Amendment to the Agreement between the Village and Consultant is in the best interests of the Village.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. That each of the recitals stated above is hereby adopted and confirmed.

Section 2. Amendment Approved. That the Amendment to the Professional Services Agreement between the Village of Key Biscayne and CSA International Inc., in substantially the form attached hereto as Exhibit "A", is hereby approved, and the Village Manager is authorized to execute the Agreement on behalf of the Village, once approved by the Village Attorney as to form and legal sufficiency.

Section 3. **Implementation.** That the Village Manager and Village Attorney are hereby authorized to take any necessary action to implement the purposes of this resolution and the Amendment.

Section 4. **Effective Date.** That this Resolution shall be effective immediately upon adoption hereof.

PASSED AND ADOPTED this 26th day of January, 2010.

MAYOR ROBERT L. VERNON

ATTEST:

CONCHITA H. ALVAREZ, MMC, VILLAGE CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

VILLAGE ATTORNEY

AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT BETWEEN THE VILLAGE OF KEY BISCAYNE AND CSA INTERNATIONAL, INC.

THIS AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT (this "Amendment") is entered into as of the 26 day of January, 2010 by and between the **VILLAGE OF KEY BISCAYNE, FLORIDA**, a Florida municipal corporation (hereinafter the "Village"), and **CSA INTERNATIONAL, INC.**, a Florida corporation (hereinafter the "Consultant").

RECITALS:

A. The Village and Consultant entered into that certain agreement titled Professional Services Agreement between the Village of Key Biscayne and CSA International, Inc. (the "Agreement"), with an effective date of July 17, 2008, for the purpose of providing seagrass restoration and mitigation services in accordance with that certain plan entitled "Seagrass Restoration and Mitigation Plan: Village of Key Biscayne" dated July, 2008 (the "Mitigation Plan"); and

B. A portion of the Scope of Services set forth in the Agreement were completed with authorization from the Florida Department of Environmental Protection ("FDEP"), while the outstanding mitigation work has been delayed due to FDEP policies which resulted in revisions to the Mitigation Plan; and

C. The Mitigation Plan has been revised based on FDEP's requirements and is entitled "Seagrass Restoration and Mitigation Plan: Village of Key Biscayne, Second Revision (October, 2009) (the "Revised Mitigation Plan"); and

D. FDEP has approved portions of the Revised Mitigation Plan pertaining to in-kind seagrass mitigation, as set forth in section 3.1.2, and baseline monitoring, as set forth in section 4.0, both sections of the Revised Mitigation Plan are attached hereto as Exhibit "B"; and

E. Consultant has submitted to the Village a modified proposal for the in-kind seagrass mitigation and baseline monitoring attached hereto as Exhibit "C", which sets forth the changes in the scope of work or services necessitated by sections 3.1.2 and 4.0 of the Revised Mitigation Plan and cost modifications (the "Modified Proposal"); and

F. FDEP has not yet approved portions of the Revised Mitigation Plan pertaining to out-of-kind mitigation, and further amendments to the scope of services and compensation within the Agreement may be necessitated once FDEP has reviewed those portions of the Revised Mitigation Plan pertaining to out-of-kind mitigation; and

G. The Village and Consultant desire to amend the Agreement to incorporate the requirements of the Revised Mitigation Plan and the Modified Proposal pertaining to in-kind seagrass mitigation and baseline monitoring, and modify the Scope of Services and Compensation for Services pursuant to the terms and conditions of this Amendment.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

1. **Recitals Incorporated.** The recitations set forth above are true and correct and are incorporated herein by this reference.

2. **Amendment Controls**. In the event of any conflict or ambiguity between the terms and conditions of this Amendment and the terms and conditions of the Agreement, the terms and conditions of this Amendment shall control. All initially capitalized words used, but not otherwise defined, herein shall have the meaning ascribed thereto in the Agreement. Except as modified in this Amendment, the Agreement is hereby ratified and confirmed and shall remain unmodified and in full force and effect.

3. **Revised Mitigation Plan.** Sections 3.1.2 and 4.0 of the Seagrass Restoration and Mitigation Plan: Village of Key Biscayne, Second Revision (October, 2009) attached hereto as Exhibit "B" shall replace those portions of the earlier Mitigation Plan attached to the Agreement as Exhibit "B" thereto.

4. **Scope of Services.** The Scope of Services contained in section 1.1 of the Agreement is hereby modified as set forth in sections 3.1.2 and 4.0 of the Revised Mitigation Plan attached hereto as Exhibit "B" and the Modified Proposal attached hereto as Exhibit "B." The Consultant shall furnish professional services and provide deliverables ("Services") for in-kind seagrass mitigation and baseline monitoring, as described in sections 3.1.2 and 4.0 of the Revised Mitigation Plan attached hereto as Exhibit "B", and the Modified Proposal attached hereto as Exhibit "B."

5. **Compensation and Payment.** The fee schedule contained in Section 3.1 of the Agreement is hereby deleted and replaced with the following:

Task 1: Mitigation Plan Revisions; Program Administration; Agency Coordination; Permitting; and Out-of-Kind Mitigation Negotiations

Task 1a: Second Revision – Mitigation Plan (complete)	$ 11,551.00
Task 1b: Program Administration, Agency Coordination, Permitting	$ 5,283.00
Task 1c: Out-of-Kind Mitigation Negotiation Support	$ 8,439.00
Total Task 1:	$ 25,273.00

Task 2: Materials; Bird Stake Construction; and Mobilization and Demobilization

Task 2a: Consultant Purchases (sediment, bags, and misc. supplies)	$ 18,412.00
Subcontracted day labor to fill 6,600 sediment bags	$ 6,325.00
Trucking Company to deliver loose and bagged sediment to Homestead	$ 3,450.00

Consultant direct labor, lodging, per diem, and associated expenses	$ 28,984.00
Task 2b: Consultant costs to subcontract marine contractor 10,753.00	$
Total Task 2:	$ 67,923.00

Task 3: Installation of Sediment Fill

Task 3a: Consultant purchases (fuel, vessel and dockage fees, and incidentals)	$ 5,003.00
Consultant labor, vessel, navigation equipment, lodging, and per diem	$125,504.00
Task 3b: Consultant costs to subcontract marine contractor $133,400.00	
Total Task 3:	$263,907.00

Task 4: Bird Stake Installation

Task 4: Bird Stake Installation	$ 7,425.00
Total task 4:	$ 7,425.00

Task 5: Baseline (Time Zero) Monitoring Survey of Sediment Fill Sites

Task 5: Baseline (Time Zero) Monitoring Survey of Sediment Fill Sites	$ 23,180.00
Total task 5:	$ 23,180.00
TOTAL ESTIMATED COST:	**$ 387,708.00**
CONTRACT BALANCE:	**$ 301,000.00**
ADDITIONAL FUNDS REQUIRED:	**$ 86,708.00**

6. **Counterparts.** This Amendment may be executed in multiple counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument. A facsimile copy of this Amendment or PDF email version shall have the same force and effect as the original thereof.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, this Amendment is executed by the Village and Consultant as of the dates set forth below their signatures.

VILLAGE:

VILLAGE OF KEY BISCAYNE,
a Florida municipal corporation

By: _____
Genaro "Chip" Iglesias, Village Manager

Date Executed: 2/5/10

Attest: _____
Conchita Alvarez, Village Clerk

Approved as to Form and Legal Sufficiency:

_____
Village Attorney

CONSULTANT:

CSA INTERNATIONAL, INC., a Florida corporation

By: _____
Name: Kevin Peterson
Title: President

Date Executed: 1/28/10

EXHIBIT "B"

REVISED MITIGATION PLAN

SECTION 3.1.2 AND SECTION 4.0

Exhibit "A"

3.1.2 Restoration Methods

The proposed methods in this Mitigation Plan were adapted from Federal guidelines and restoration plans for seagrass restoration and mitigation efforts. Final recommendations related to fill type (direct or bagged) for each site are based on field observations, site conditions, accessibility, and processed (post-survey) spatial data confirming width, depth, and area. Each of the 33 sites (0.46 acres) is recommended for filling and bird staking. None of the fill sites are recommended for seagrass planting at this time due to the time of year for implementation, location of sites in Areas B and D where no suitable donor material is available, and low survival rates for planting units in Area A documented as part of the quarterly monitoring events. Bird staking without filling is not proposed.

Sediment Fill

Sediment fill is a proposed alternative to bring each of the seagrass injuries to grade with the surrounding unimpacted areas and is suggested as a method for badly eroded areas (Hall et al., 2006). The purpose of this alternative is to stabilize the injury to prevent further erosion and allow for colonization of seagrass from surrounding unimpacted areas. Two methods are proposed for placing sediment into these areas: 1) sediment filled biodegradable, non-bleached, non-preserved burlap bags placed by snorklers/divers directly into the injury and 2) loose sediment placed directly into the injury with a crane and mechanized clamshell bucket, then capped with sediment filled bags. Both variations of sediment placement are a rapid way of returning the seafloor to its original grade and composition.

Two sediment types are recommended for placement into the fill sites based on the fill method used: 1) 0.25 limestone pea rock for direct placement and 2) Fine Aggregate FDOT 87-089 (Lake Fill) for filling of sediment bags or other compatible material, which may include mixtures of Lake Fill and 919.2 Concrete Screenings previously recommended and used in BNP seagrass restoration programs. Lake Fill contains a higher content of carbonate, silts and clays, and fine sands whereas the 919.2 Concrete Screenings have a greater variation in grain size but still have a relatively high carbonate content. As indicated in Hall et al. (2006), the introduction of finer-textured sediments increases the ability of a restoration site to support seagrass growth. In total, approximately 393 yd^3 of compatible sediments (Table 1) will be purchased from local quarries and trucked to staging areas located in close proximity to the sites. Approximately 156 yd^3 of material will be placed by hand or hopper into 26-in. x 14-in. burlap bags and secured using 18-gauge, 7.5-in. mild steel wire ties for a total of up to 6,660 bags. Table 2 summarizes the recommended fill method, estimated number of sediment bags, and estimated direct sediment volumes for each proposed site. Bags will be placed on wooden pallets to minimize the need for additional manual handling during staging and transport. Each bag holding approximately 1.0 ft^3 (0.037 yd^3) of material weighs approximately 50 lbs and has a height of 6 to 8 in. when lying flat.

Table 2. Proposed fill method and estimated number of sediment bags and sediment volume for proposed sites in Areas A, B, D, and Monroe County.

Site	Direct Fill or Sediment Bags	Number of Sediment Bags		Sediment Volume (yd^3)		Total Volume (yd^3)
		Bags Only	Cap for Fill	Direct Fill Volume (yd^3)	Sediment Bags Volume (yd^3)	
Area A						
AP02	Fill and cap with bags	0	20	4.8	0.7	5.5
AP04	Fill and cap with bags	0	33	6.5	1.2	7.7
AP05	Fill and cap with bags	0	7	1.8	0.2	2.1
AP06	Fill and cap with bags	0	2	0.7	0.1	0.8
AP09	Bags only	70	0	0.0	2.6	2.6
AP10	Fill and cap with bags	0	41	6.2	1.5	7.7
AS19	Bags only	792	0	0.0	29.3	29.3
DEP_AP01	Bags only	384	0	0.0	14.2	14.2
DEP_AP02	Fill and cap with bags	0	6	1.6	0.2	1.8
DEP_AP03	Bags only	255	255	0.0	9.4	9.4
DEP_AP04	Bags only	25	0	0.0	0.9	0.9
DEP_AP05	Bags only	251	0	0.0	9.3	9.3
DEP_AP07	Bags only	28	0	0.0	1.0	1.0
Area B						
BP10	Bags only	68	0	0.0	2.5	2.5
BP14	Bags only	615	0	0.0	22.8	22.8
BP16	Bags only	141	0	0.0	5.2	5.2
BP18	Fill and cap with bags	0	146	22.8	5.4	28.2
BP19	Fill and cap with bags	0	43	11.2	1.6	12.8
BP23a	Fill and cap with bags	0	17	5.3	0.6	5.9
BP24	Fill and cap with bags	0	121	19.5	4.5	24.0
BP25	Fill and cap with bags	0	39	14.4	1.5	15.9
BP26	Bags only	594	0	0.0	22.0	22.0
DEP_BP01	Bags only	131	0	0.0	4.8	4.8
DEP_BP03	Bags only	32	0	0.0	1.2	1.2
Area D						
DEP_DP02	Fill and cap with bags	0	840	46.4	31.1	77.4
Monroe County						
BKP01	Fill and cap with bags	0	29	2.7	1.1	3.8
BKP02	Fill and cap with bags	0	9	1.1	0.3	1.4
BKP03	Fill and cap with bags	0	1	0.4	0.0	0.4
BKP04	Fill and cap with bags	0	69	10.2	2.6	12.8
BKS01	Bags only	101	0	0.0	3.7	3.7
BKS02	Bags only	351	0	0.0	13.0	13.0
LKP01-A (south scar)	Bags only	617	0	0.0	22.8	22.8
LKP01-B (north scar)	Bags only	445	0	0.0	16.5	16.5
LKS01	Bags only	84	0	0.0	3.1	3.1
All Sites						
Subtotal	---	4,992	1,578	155.6	237.0	--
Total for Fill Sites	---	6,660		393		392.6

Sediment Transport

The sediment or sediment-filled bags will be loaded at staging areas onto a shallow-draft barge (24 in. loaded draft) and secured during transport with a combination of tarps, cinder blocks, or 12-in. x 12-in. concrete pilings. The barge will be positioned adjacent to the blowholes or deep scars by the barge tender and spudded down with the hollow spuds (anticipated to be 6 in. with small penetrating points) such that a minimum reach will be needed with the clamshell bucket. In areas too shallow for the barge and tender to maneuver, the barge will be positioned in close proximity and sediment bags will be offloaded onto specifically designed floating platforms. These platforms will be pushed to the sites manually or by a small skiff or inflatable boat that can safely operate in very shallow water (<1 ft).

Sediment Placement

Prior to fill placement at a restoration site, any lobsters observed in the area will be removed and released within swimming distance, and rays or sharks will be herded from the area. Type III turbidity curtains will be installed and will remain in place for up to 12 h to allow ample time for sediment resettlement. If turbidity levels exceed the FDEP State water quality standards as outlined in DEP 62-302.530, fill operations will cease until the readings return to acceptable levels. Turbidity curtains will be removed following settlement of suspended sediments and/or when conditions have reached background levels (typically overnight). However, if the project team determines that weather conditions may cause curtains to break free if left out overnight, curtains may be pulled at the end of a day's activities. Curtains will be moved by removing stakes and towing the floating curtains to the next restoration site for installation around blowhole features.

In areas requiring direct placement of sediment, a front end loader or crane with a clamshell attachment will be used to accurately place sediment into the blowhole or deep propeller scar feature. To cap the feature, a pallet of sediment bags will be lifted from the barge with a crane equipped with specialized crane forks or other mechanism. The pallets will be placed below the surface of the water and held just above the seabed within the blowhole feature. Snorkelers will offload the bags one by one and place them in a single layer to cap the fill within the blowhole feature. If necessary, two layers of sediment bags will be placed on top of the first layer to ensure a bed level with the surrounding unimpacted seagrass bed. This method will be repeated for sites that require sediment bags only and can be reached safely by the crane arm. For areas that cannot be accessed by the barge, sediment bags will be placed on a floating platform, moved to the site, and offloaded one by one and placed in a single or multiple layers, depending on the injury depth and volume requirements.

Fertilizer Use

Each fill site will be treated with roosting bird stakes to encourage natural fertilization, a method that has been documented to be an effective treatment to encourage re-growth of seagrasses in impacted areas by ensuring a regular release of fertilizer below each stake over an area of approximately 3 m^2 (32 ft^2) (Fourqurean et al., 1995; Kenworthy et al., 2000). Water depths of 1.5 m (4.9 ft) or less at Mean High Water are generally considered ideal for bird feces to reach the seafloor in concentrated doses for as long as the stakes are in place (National Oceanic and Atmospheric Administration and FDEP, 2004).

Approximately 550 bird stakes will be installed in the restoration sites (Table 3). This estimate is based on a general assumption of one bird stake/m^2 (one bird stake/10.8 ft^2), but site conditions and sporadic in-growth within the injury sites will dictate the final number of bird stakes required per site. Bird stakes will be constructed of 1.0 in. (2.5 cm) outside diameter Schedule 80 polyvinylchloride (PVC) support poles and 2-in. x 4-in. x 4-in. (5-cm x 10-cm x 10-cm) treated wood blocks attached atop the support poles. Bird stakes will be placed just inside the immediate edge of injuries and throughout the interior of each of the injuries at 2-m intervals immediately following the completion of the sediment fill. For propeller scars less than 2 m (6.5 ft) wide, a single row of stakes will be placed down the center of the scar.

Table 3. Estimated number of bird roosting stakes in proposed fill sites in Areas A, B, D, and Monroe County.

Site	Number of Bird Stakes
Area A	
AP02	8
AP04	10
AP05	6
AP06	2
AP09	10
AP10	8
AS19	38
DEP_AP01	25
DEP_AP02	6
DEP_AP03	11
DEP_AP04	5
DEP_AP05	13
DEP_AP07	3
Area B	
BP10	3
BP14	33
BP16	6
BP18	29
BP19	20
BP23a	11
BP24	25
BP25	34
BP26	34
DEP_BP01	9
DEP_BP03	2
Area D	
DEP_DP02	37
Monroe County	
BKP01	3
BKP02	2
BKP03	1
BKP04	17
BKS01	8
BKS02	29
LKP01-A	44
LKP01-B	45
LKS01	7
Total for Fill Sites	546

4.0 RECOMMENDED MONITORING FOR THE PROPOSED IN-KIND SEAGRASS MITIGATION

The success criteria, monitoring schedule, and monitoring parameters have been modified from the original monitoring plan and reflect recommendations and FDEP comments related to the 26 June 2009 CSA memorandum regarding success criteria and monitoring (CSA International, Inc., 2009b). The following subsections provide the revised success criteria as well as the proposed monitoring schedule and parameters.

4.1 SUCCESS CRITERIA

4.1.1 Restoration Sites

Success criteria for the restoration sites are provided below by restoration treatment type. At a minimum, monitoring data must show that the mitigation sites, regardless of treatment type, have met the success criteria or are trending toward recovery at the end of 5 years. An additional 2 years of monitoring may be required if a reasonable expectation exists that additional time will allow mitigation to meet the criteria.

Area A: Scars with Planting Units and Bird Stakes

- *Thalassia testudinum* density should reach similar densities within the treatment sites as compared to the reference sites by rejection of the null hypothesis that the treatment sites support ≤75% of the *T. testudinum* density observed in the reference sites at a 95% confidence level within the monitoring period.
- An 80% success rate for *Halodule wrightii* planting units should be reached by the 12-month monitoring event or additional restoration actions may be required by the FKNMS.

Area A: Bird Stakes Only

- The reduction in scar width in the treatment sites should be greater than in the control sites within 2 years by rejection of the null hypothesis that the reduction in scar width is 50% less than that of the control at a 95% confidence level; or
- *Thalassia testudinum* density should reach similar densities within the treatment sites as compared to the reference sites by rejection of the null hypothesis that the treatment sites support ≤75% of the *T. testudinum* density observed in the reference sites at a 95% confidence level within the monitoring period.

Sediment Fill and Bird Stakes

Propeller Scars and Narrow Injuries (<1 m)

- *Thalassia testudinum* density should reach similar densities within the treatment sites as compared to the reference sites by rejection of the null hypothesis that the treatment sites support ≤75% of the *T. testudinum* density observed in the reference sites at a 95% confidence level within the monitoring period.

Blowholes and Wider Injuries (>1 m)

- *Thalassia testudinum* density should be trending towards similar densities within the treatment sites as compared to the reference sites by rejection of the null hypothesis that the treatment sites support ≤50% of the *T. testudinum* density observed in the reference sites at a 95% confidence level within the monitoring period.

4.1.2 Donor Sites

The success criteria for the seagrass donor sites have not been modified from the original Mitigation Plan, as stated below:

- *H. wrightii* densities within the donor core holes should reach similar densities as compared to the reference areas after 1 year by not rejecting the null hypothesis that the densities at the core holes are not different from densities at the reference areas at a 95% confidence level.

4.2 PROPOSED MONITORING SCHEDULE

The monitoring schedule by restoration treatment and monitoring parameter as described below in **Section 4.3** is provided in **Table 5**. The first year of monitoring in Area A has already been completed. The proposed monitoring schedule for the new restoration sites (sediment fill and bird stake treatment) is different for the first year of monitoring compared to Area A because seagrass transplantation is not being conducted. Donor site monitoring was previously recommended to be conducted quarterly for 1 year. Quarterly monitoring has been completed, and the donor sites have recovered as the established success criteria have been met. No additional monitoring is recommended for the donor sites.

Table 5. Monitoring schedule for seagrass restoration efforts for the Village of Key Biscayne Seagrass Mitigation Program.

Treatment Type	Monitoring Parameter	Months										
		0	3	6	9	12	18	24	30	36	48	60
Area A Restoration Sites												
Planting Units/ Bird Stakes	Planting unit survival	o	o	o	o	o	—	—	—	—	—	—
Planting Units/ Bird Stakes and Reference	Percent cover	o	o	o	o	—	—	—	—	—	—	—
	Short shoot count	o	—	—	—	o	•	•	•	•	•	•
Bird Stakes	Scar width	o	o	o	o	o	•	•	—	—	—	—
	Short shoot count	—	—	—	—	o	•	•	•	•	•	•
New Restoration Sites												
Sediment Fill/ Bird Stakes	Short shoot count	•	—	—	—	•	—	•	—	•	•	•

o = Activities that have already been completed; • = Activities still to be completed.

4.2.1 Area A Restoration Sites

It is proposed that monitoring be conducted for up to 5 years for short shoot counts, or until the success criteria are met for a maximum of 7 years. Beginning at the 18-month monitoring event, eight sites will be monitored (planting units/bird stakes and bird stakes only) for seagrass density using short shoots. During the 5 years, a total of 11 monitoring events are proposed – quarterly monitoring during Year 1 (completed), bi-annual monitoring for Years 2 and 3, and annual monitoring for Years 4 and 5. If at the end of 5 years the sites are trending toward success but have not met the criteria, 2 additional years of monitoring may be necessary. Monitoring of scar width at bird stakes-only sites is recommended for 2 years relative to the established success criteria.

4.2.2 New Restoration Sites

It is proposed that monitoring be conducted at up to 40% of the sediment fill/bird stake scars, or 14 of the 33 sites. Sites will be stratified by area and method (direct sediment placement and sediment bags only) and randomly selected to reflect differences in location and treatment type. Monitoring will be conducted for up to 5 years or until the required success criteria are met for a maximum of 7 years. A baseline survey will be conducted immediately after completion of restoration activities, with subsequent surveys conducted annually during the growing season. An additional survey at 3 to 6 months may be necessary to allow for data collection during the growing season and to coincide with Area A monitoring. If at the end of 5 years the sites are trending toward success but have not met the criteria, 2 additional years of monitoring may be necessary.

4.3 MONITORING PARAMETERS

Monitoring parameters remain similar to those previously proposed in the original Mitigation Plan, with one addition: in the bird stake-only treatment, short shoot counts and scar width measurements will be collected, as suggested by FDEP. Monitoring parameters have been selected based on the success criteria, discussions with FDEP, and previous monitoring results. Additionally, sediment characteristics will be described for all of the monitored sites. **Table 6** shows the parameters to be monitored for each treatment type.

Table 6. Monitoring parameters by restoration treatment type.

Monitoring Parameter	Restoration Treatment		
	Planting Unit/Bird Stakes	Bird Stakes	Sediment Fill/Bird Stakes
Short shoot count	•	•	•
Scar width	—	•	—

4.3.1 Short Shoot Counts

Thalassia testudinum short shoot counts will be collected to estimate seagrass density within the restoration treatment areas and surrounding undisturbed (reference) areas. The number of short shoots of *T. testudinum* will be counted from within a gridded 0.0625-m^2 quadrat (0.25 m x 0.25 m) (sensu Tomlinson and Vargo, 1966). The quadrat will be placed relative to tagged bird stakes selected for monitoring based on the type of restoration treatment and injury width. To obtain the best estimate and avoid inclusion of nonresident biota in the count, the data collector

will remove any drift algae or decaying seagrass leaves prior to data collection to expose attached short shoots.

Within propeller scars and narrow injuries treated with planting unit/bird stakes, bird stakes, and sediment fill/bird stakes, a quadrat will be placed mid-scar and 1 m from each tagged bird stake. For the sediment fill/bird stakes treatment of blow holes and wider scars, quadrat placement relative to the tagged bird stakes will be haphazard due to the non-linear shape of the injury; each quadrat will be placed approximately 1 m from the nearest bird stake and the relative bearing will be noted on the data sheet. For the reference areas, a quadrat will be haphazardly placed approximately 1 to 2 m from the edge of the injury feature within the adjacent unimpacted seagrass bed.

4.3.2 Scar Width

Scar width will be measured at the selected bird stake sites and corresponding reference sites for 2 years. Beginning at one end of the scar, width measurements will be collected to the nearest centimeter every 4 m along the scar with a graduated "T" bar. For each measurement, the "T" will be placed within the propeller scar with the top edge of the "T" against the innermost seagrass shoot and parallel to the side of the scar so that the graduated stem of the "T" is placed perpendicular across the scar. The distance to the nearest seagrass shoots on the opposite side of the scar will then be measured.

EXHIBIT "C"

MODIFIED PROPOSAL

CSA International, Inc.
8502 SW Kansas Avenue
Stuart, Florida 34997 USA

www.csaintl.com
Phone: 772-219-3000
Fax: 772-219-3010

Mr. Generao "Chip" Iglesias
City Manager, Village of Key Biscayne

Mr. Armando Nunez
Director, Department of Public Works
88 West McIntyre Street, Suite 210
Key Biscayne, Florida 33149

2 December 2009

Subject: **Cost proposal to modify CSA International Inc.'s existing contract to reflect a scope change and cost modification**

Dear Sirs,

CSA International, Inc. (CSA) and the Village of Key Biscayne (VKB) entered into an agreement for professional services in July 2008 for the purpose of providing services to implement a Seagrass Restoration and Mitigation Plan. A portion of this work was completed with authorization from the Florida Department of Environmental Protection (FDEP) while the outstanding mitigation work was delayed due to FDEP policies that resulted in additional mapping, methods changes, and plan revisions.

Recently, CSA submitted a revised Seagrass Restoration Plan: Village of Key Biscayne, Second Revision (October 2009) on behalf of the VKB outlining a proposal that, if authorized, would provide for 1) a total of 0.88 acres of in-kind restoration (66% of the agreed to 1.33 acres of mitigation credit) and 2) an out-of-kind mitigation project that would address the remaining 0.45-acre mitigation.

On 12 November 2009, the FDEP authorized the VKB to proceed with restoring identified deep scars by filling and placement of bird stakes as detailed in Section 3.1.2 of the revised plan. The VKB is currently awaiting a response from the FDEP on the out-of-kind mitigation proposal.

As per the June 2009 meeting comprising representatives from the FDEP, VKB, CSA, and Coastal Systems International, Inc. (CSI), the VKB is committed to conduct the in-kind restoration efforts prior as possible once all the permits and approvals have been granted.

PROPOSAL

The current balance of funds associated with the existing agreement between CSA and the VKB is $301,000. CSA has estimated that the total costs for mitigation plan revisions and associated tasks, agency coordination, and implementation of the FDEP-authorized work described in Section 3.1.2 of the revised plan (Attachment 1) will be approximately $365,000 plus and additional $24,000 to conduct the baseline monitoring efforts. A brief technical and cost proposal (including proposed fee schedule) is provided below. The costs reflect a 10% reduction in CSA's rates (Attachment 2), which were adopted in October 2009 for this project.

Task 1 Mitigation Plan Revisions, Program Administration, Agency Coordination, Permitting, and Out-of-Kind Mitigation Negotiations

Task 1 is presented as a time-and-materials service for making all revisions to the Mitigation Plan, administering the project, coordinating with the various agencies, and permitting. CSA has revised the Mitigation Plan under a sub-agreement to CSI; however, in an effort to avoid additional fees to the VKB, CSI and CSA propose to include these incurred costs within Task 1 under the modified contract. CSA anticipates additional plan revisions after receiving comments from the FDEP. Ongoing program administration and agency coordination is integral to the process of implementing the proposed mitigation.

CSA is currently working under a separate task order to begin the process of obtaining permits and/or authorizations from the Florida Fish and Wildlife Conservation Commission (FWC), Florida Keys National Marine Sanctuary (FKNMS), Miami-Dade Department of Environmental Resources Management (DERM), U.S. Coast Guard (USCG), Monroe County, and U.S. Army Corps of Engineers, as required. In order to secure these permits and/or authorizations in a timely and effective manner, further time in addition to that allotted in the current task order may be necessary.

As needed, CSA proposes to support the VKB and CSI to provide information, research options, and participate in the development and negotiations related to out-of-kind mitigation or other methods to complete the outstanding VKB mitigation.

Task 1a – Second Revision – Mitigation Plan (complete)	$11,551
Task 1b – Program Administration, Agency Coordination, Permitting	$5,283
Task 1c – Out-of-Kind Mitigation Negotiation Support (as needed)	$8,439
TOTAL	**$25,273**

Task 2 Materials, Bird Stake Construction, and Mobilization and Demobilization

Task 2 is presented as a fixed-price component and includes the purchase of approximately 392 yd^3 of sediment fill; 6,600 sediment bags; labor to fill sediment bags; materials and labor for construction of bird stakes; use of yard on the Miami River; initial mobilization of a marine construction subcontractor's barge, tug, crane, and small vessels; purchase of pallets, materials to build floating platforms, and miscellaneous items; travel to and from Miami to Card Sound Road area (includes 2 days of barge transit); trucking costs for sediment and bag delivery to Card Sound; and all demobilization of equipment and staff. Task 2 includes travel, lodging, and per diem for 3 of the 6 anticipated staff during the mobilization and demobilization phase.

Task 2a – CSA purchases (sediment, bags, and miscellaneous supplies)	$18,412
Subcontracted day labor to fill 6,600 sediment bags	$6,325
Trucking company to deliver loose and bagged sediment to Homestead	$3,450
CSA direct labor, lodging, per diem, and associated expenses	$28,984
Task 2b – CSA cost to subcontract marine contractor	$10,753
TOTAL	**$67,923**

Task 3 Installation of Sediment Fill

Task 3 is presented as a day rate for the installation of sediment fill in accordance with the revised plan, Section 3.1.2. The day rate ($9,100) includes all labor, the barge, vessels, navigation equipment, lodging and per diem, fuel, and incidentals. The field work is estimated at up to 29 field days, including some weather contingency. CSA

will only charge for those days in the field. The standby rate in the case of inclement weather will be charged at a 50% reduced fee.

Task 3a – CSA purchases (fuel, vessel and dockage fees, and incidentals)	$5,003
CSA labor, vessel, navigation equipment, lodging and per diem	$125,504
Task 3b – CSA cost to subcontract marine contractor	$133,400
TOTAL (29 days at $9,100/day)	**$263,907**

Task 4 Bird Stake Installation

Task 4 is presented as a fixed price for installing 540 bird stakes in the sediment fill restoration sites authorized in the revised plan. The level of effort for installing the bird stakes is anticipated to be 2 days.

Task 4 – Bird Stake Installation **$7,425**

Task 5 Baseline (Time Zero) Monitoring Survey of Sediment Fill Sites

Task 5 is presented as a fixed price for mobilization and demobilization, field work, and report preparation to conduct the initial baseline monitoring (Time Zero) at the sediment fill sites. In total, 14 of the 33 fill sites were proposed for monitoring. The level of effort for conducting the monitoring is anticipated to be 3 days.

Task 5 – Baseline Monitoring Survey of Sediment Fill Sites **$23,180**

SUMMARY TABLE

Task 1 – Mitigation Plan Revisions, Program Administration, Agency Coordination, Permitting, and Out-of-Kind Mitigation Negotiations	**$25,273**
Task 2 – Materials, Bird Stake Construction, and Mobilization and Demobilization	**$67,923**
Task 3 – Sediment Filling and Bird Stake Installation	**$263,907**
Task 4 – Bird Stake Installation	**$7,425**
Task 5 – Baseline (Time Zero) Monitoring Survey of Sediment Fill Sites	**$23,180**
TOTAL ESTIMATED COST	**$387,708**
CONTRACT BALANCE	**$301,000**
ADDITIONAL FUNDS REQUESTED	**$86,708**

We appreciate the opportunity to submit this proposed contract modification request due to changes in the scope of work for the seagrass mitigation project. If I can answer any questions, please do not hesitate to contact me by phone at (772) 219-3050 or by e-mail at amccarthy@conshelf.com.

Regards,

Anne McCarthy
Director, Coastal Restoration

Approved by:

Fredrick B. Ayer II
Vice President/General Manager